

CLAIMS

1. A process for detecting the presence of a nucleoside diphosphate in a sample, comprising the step of detecting the dephosphorylation of the phosphoenzyme form of a nucleoside diphosphate kinase (NDPK).
- 5 2. A process for detecting the presence of a nucleoside triphosphate in a sample, comprising the step of detecting the phosphorylation of a nucleoside diphosphate kinase (NDPK) to the phosphoenzyme form.
3. The process of claim 1 or claim 2, wherein the phosphorylation or dephosphorylation is detected by using an intrinsic property of NDPK.
- 10 4. The process of claim 1 or claim 2, wherein the NDPK is modified to carry a label which gives a different detectable signal when the enzyme is phosphorylated from when it is unphosphorylated.
5. The process of claim 4, wherein the NDPK carries a fluorescent label.
6. The process of claim 5, wherein the fluorescent label is attached to the NDPK via a
15 cysteine residue.
7. The process of claim 5 or claim 6, wherein the fluorescent label is IDCC (N-[2-(iodoacetamido)ethyl]-7-diethylaminocoumarin-3-carboxamide).
8. The process of claim 1, wherein the nucleoside diphosphate is ADP or GDP.
9. The process of claim 2, wherein the nucleoside triphosphate is ATP or GTP.
- 20 10. The process of any preceding claim, being a quantitative process.
11. The process of any preceding claim, wherein the NDPK is the NDPK of *Myxococcus xanthus* carrying a Asp112→Cys mutation, and carrying an IDCC label at this mutated residue.
12. NDPK which is modified to carry a label which gives a different detectable signal when
25 the enzyme is phosphorylated from when it is unphosphorylated.
13. The NDPK of claim 12, wherein the label on the modified NDPK is a fluorescent label.

14. The NDPK of claim 13, wherein the fluorescent label is attached to the NDPK via a cysteine residue.
15. The NDPK of claim 13 or claim 14, wherein the fluorescent label is IDCC.
16. NDPK of *Myxococcus xanthus* carrying a Asp112→Cys mutation, and carrying an IDCC
5 label at this mutated residue.
17. NDPK modified by the attachment of at least one detectable label that is sensitive to the binding of a nucleoside diphosphate
18. A substrate having the NDPK of any one of claims 12 to 17 immobilised thereto.
19. The NDPK of any one of claims 12 to 17 for use as an *in vivo* or *in vitro* diagnostic
10 reagent.